

REMARKS

Claims 1-5 and 12-23 remain pending. Reconsideration and review of the pending claims are respectfully requested.

CLAIM REJECTIONS 35 USC §103

Claims 1-5 and 12-23 stand rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,724,259 to Seymour et al. (Seymour) in view of U.S. Patent No. 5,646,716 to Nagashima. Applicant disagrees.

Independent claim 1 defines a camera assembly for use in scanning a paper substrate of a printing press and independent claim 12 defines a lighting assembly for a camera positioned adjacent a paper substrate of a printing press. The camera assembly or lighting assembly includes a light source and two mirrors, wherein the two mirrors direct light in two distinct paths from the same light source to provide uniform illumination of a portion of the paper substrate. Method claims 13 and 17 include similar limitations. Applicant believes that neither the Seymour nor Nagashima references alone or in combination describe or suggest such an assembly or method.

In particular, Seymour describes a camera assembly including two light sources, each light source having an associated reflector for directing light to the web, as illustrated in Fig. 3(a) and described at col. 6, lines 3-7. The light sources are point sources of light, such as bulbs or strobe lights. The reflectors are circular Vromanoid reflectors, each surrounding a respective bulb and having a characteristic such that equal angles of light emitted from the light source translates into equal distances on the web (see col. 6, lines 3-34 and Figs. 3(a)-(c)). The two light sources and associated two reflectors are positioned symmetrically with respect to a plane that is perpendicular to the paper substrate in order to provide uniform illumination to the web. Seymour at col. 7, line 1 suggests that illumination could be provided by a single strobe light or a plurality of strobe lights.

The Examiner notes that Seymour discloses the use of a single light source but is silent on the number of reflectors when only one light source is used. It is the Examiner's opinion that Seymour contemplates the use of a single light source with the same set up (number of reflectors) as that for a plurality of light sources. Applicant disagrees. The only type of reflector

described in Seymour is a circular Vromanoid reflector. Such a reflector, having a surface defined by rotation around an axis, can only be used in conjunction with a single point source of light. Therefore, if Seymour were to use a single light source, it only makes sense that a single reflector would be used. A second reflector would have no function using a single point source of light.

Further, Seymour states that accurate optical density measurement requires consistent even illumination over the imaging field of view, with minimal extraneous reflections or glare (col. 2, lines 43-45). Therefore, Seymour would not be motivated to use a single light source with multiple reflectors thereby increasing extraneous reflections and glare and decreasing consistent, even illumination.

Furthermore, Nagashima describes an image recording apparatus including a single linear light source and two elliptical reflectors 18b and 18a. Seymour states that typical prior art designs concentrate light with a parabolic reflector, making inefficient use of the light and illuminating areas outside the field of view (col. 2, lines 45-48). The elliptical mirrors of Nagashima are akin to parabolic reflectors. Therefore, Seymour teaches away from using the elliptical mirror of Nagashima, much less the two elliptical mirrors of Nagashima, which would make more inefficient use of the light. This is a contrast to the Examiner's statement of motivation to combine the Seymour and Nagashima references to produce efficient light utilization.

Claims 1, 13 and 17 are further rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,646,716 to Nagashima in view of U.S. Patent No. 6,661,446 to Beier et al (Beier).

Beier describes an optical distance measuring device, in particular, a device for measuring the positional deviation of n different points from their reference positions, where the n different points are on a printing form, such as a plate or cylinder, which is being imaged. Imaging a printing form refers to the process of encoding information, such as desired text or images to be printed, onto the printing form. For example, in a gravure printing process, the cylinders used in printing images on paper are typically engraved using lasers. This process can be performed off a press or can be accomplished on a press that is specially equipped to allow direct imaging of plates on the press, i.e., so called direct imaging printing presses. In Beier, the

resultant positional deviations are important when imaging the printing form in order to insure that the imaging process produces an accurate imaged plate or cylinder. For example, the positional information can be used in an autofocus device to insure that a correct distance exists between a laser performing the engraving of the cylinder, or to appropriately control the intensity of the laser.

There is no suggestion or motivation in either Beier or Nagashima reference as to how or why one would select the electromagnetic radiation source and associated optics of the distance determining device of Beier and replace them with the arrangement of a linear light source and associated reflectors of Nagashima to obtain an operable assembly as defined by Applicant's claims for imaging a paper substrate in a printing press. The Examiner states that it would be obvious to load the image recording assembly of Nagashima into the device of Beier for a more compact direct imaging printing press. First, this motivation to combine is not described by or suggested in either the Beier or Nagashima reference. Second, there is no motivation because the two references relate to distinct applications, i.e., Beier describing a distance measuring device for use in imaging a printing form on a printing press and Nagashima describing an image copying apparatus of a copy machine.

Therefore, independent claims 1, 12, 13, and 17 define over the references cited by the Examiner, and are allowable. Claims 2-5 depend from claim 1, claims 21-23 depend from claim 12, claims 14-16 depend from claim 13, and claims 18-20 depend from claim 17, and are allowable for at least the reasons that apply to the independent claims.

In view of the foregoing, allowance of the pending claims are respectfully requested.

Respectfully submitted,



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